

WHAT IS CLAIMED IS:

1. A tool bar including an adaptor constructed to be coupled to a driving device, a body constructed to be mounted with cutting tools and a tip constructed to be supported by a workpiece, said body being constructed to be mounted with one or more cutting tools, wherein:

5 the adaptor and tip are made of metal material;
the body is made of composite material having high stiffness;
the composite material constructing the body is formed to surround at least a portion of the adaptor and at least a portion of the tip; and

the metal material constructing the adaptor and tip and the composite material
10 constructing the body are securely joined to each other in an interface therebetween.

2. The tool bar as claimed in claim 1, wherein the adaptor and tip are formed with engagement protrusions, respectively, the engagement protrusion of the adaptor is inserted into the body at an end of the body and is securely joined with composite material constructing the body, and the engagement protrusion of the tip is inserted into the body at the other end of the
15 body and is securely joined with composite material constructing the body.

3. The tool bar as claimed in claim 1, wherein the adaptor and tip are connected via a rod made of metal material, and a composite material layer is laminated on an outer surface of the rod.

4. The tool bar as claimed in claim 3, wherein the rod, the adaptor and the tip are formed as
20 separate members, and engaged with one another in an interference-fit manner.

5. The tool bar as claimed in claim 2, wherein the adaptor is formed as two members including a body and a shank, and the shank is inserted into and securely engaged with a hole formed in the body of the adaptor.

6. The tool bar as claimed in any one of claims 1 to 5, wherein a hardness reinforcement
25 coating layer made of Cr or Ni based alloy is coated on the composite material constructing the body.

7. The tool bar as claimed in any one of claims 1 to 5, wherein the body is perforated with holes for use in mounting cutting tools in a direction of intersecting a longitudinal axis of the body.
8. A tool bar mounted with cutting tools for machining a workpiece, comprising:
5 a metal bar occupying a portion of the length of the tool bar;
a composite bar occupying the remainder of the length of the bar; and
a connecting member which surrounds the circumference of the metal bar and composite bar and fixes the metal bar and the composite bar to each other.
9. The tool bar as claimed in claim 8, wherein the metal bar and the composite bar
10 comprises at least two separate bars, respectively, and the metal bar and the composite bar are arranged along a longitudinal direction of the tool bar so that one metal bar is disposed at an outermost position.
10. The tool bar as claimed in claim 9, wherein the connection member comprises at least two separate members.
11. The tool bar as claimed in claim 9 and 10, wherein the connecting members are hollow
15 rod-shaped members in which holes are formed in the longitudinal direction thereof, and the metal bar and the composite bar are inserted into and fixed to the holes.
12. The tool bar as claimed in claim 11, wherein the holes of the connection members are partitioned by walls formed in the middles thereof.
13. The tool bar as claimed in claim 12, wherein the metal bars and composite bars which
20 have been inserted into recesses of the connecting members are fixedly bonded to each other by an adhesive.
14. The tool bar as claimed in claim 12, wherein the metal bars and the composite bars are fitted into and fixed to recesses of the connecting members in an interference-fit manner.
15. The tool bar as claimed in claim 11, wherein one end of the hollow of the connecting
25 member positioned at an end of the tool bar is closed so that the metal bar and the composite bar are inserted into and fixed to a hole formed at the other end of the connecting member.

16. The tool bar as claimed in claim 12, wherein step portions are formed along outer circumferential portions of both end surfaces of the metal bar and composite bar, and surfaces of the walls partitioning the holes of the connecting members are formed with step protrusions to come in contact with step surfaces of the step portions.
- 5 17. The tool bar as claimed in claim 15, wherein fastening holes are formed in the middles of the lengths of the connecting members so that cutting tools are mounted therein.